

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method of manufacturing a dental prosthesis, comprising:
 - a step of preparing a substrate of the dental prosthesis that is constituted by a dental molding material;
 - a step of forming a back coating layer on at least a part of a surface of the substrate, by using a first porcelain that is constituted principally by ceramic;
 - a step of forming a casting mold such that the substrate and the back coating layer are disposed in the casting mold and such that a void is provided on a surface of the back coating layer and a porcelain introducing passage communicating the void with an outside is provided; and
 - a step of forming a cast coating layer on at least a part of a surface of the back coating layer, by pouring a second porcelain, which is held by a ceramic holding portion provided with the casting mold and is softened by heating with the casting mold, into the void of the casting mold via the porcelain introducing passage under pressure using the casting mold heated to a casting temperature to form at least two coating layers including the back coating layer and the cast coating layer on the surface of the substrate,wherein
 - the second porcelain is constituted principally by ceramic whose composition is different from that of the ceramic of the first porcelain such that a viscosity of the second porcelain at the casting temperature is lower than that of the first ~~porcelain~~ porcelain,

the first porcelain has, as a main component, a glass composition that is essentially constituted by oxides having respective percentage contents as follows:

SiO_2 _____ 40-75 (mass %);
 Al_2O_3 _____ 10-20 (mass %);
 K_2O _____ 5-15 (mass %);
 Na_2O _____ 2-10 (mass %);
 Li_2O _____ 0.1-2 (mass %);
 ZrO_2 _____ 0-7 (mass %);
 CaO _____ 0-5 (mass %);
 MgO _____ 0-5 (mass %); and
 SnO_2 _____ 0-30 (mass %);

and the second porcelain has, as a main component, a glass composition that is essentially constituted by oxides having respective percentage contents as follows:

SiO_2 _____ 60-70 (mass %);
 Al_2O_3 _____ 10-20 (mass %);
 K_2O _____ 5-15 (mass %);
 Na_2O _____ 3-15 (mass %);
 Li_2O _____ 0.1-3 (mass %);
 ZrO_2 _____ 0-3 (mass %);
 CaO _____ 0.1-5 (mass %);
 MgO _____ 0.1-5 (mass %);
 B_2O_3 _____ 0-3 (mass %);
 CeO_2 _____ 0-3 (mass %); and
 Sb_2O_3 _____ 0-7 (mass %).

2. (Previously Presented) The method according to claim 1,

wherein the casting mold forming step includes:

a sub-step of forming, on at least a part of the surface of the back coating layer, a model layer made of a material that is eliminable by burning thereof,

a sub-step of embedding the model layer in a matrix constituting the casting mold; and

a sub-step of forming the casting mold, which is provided with the void corresponding to the model layer, by burning and eliminating the model layer after hardening the matrix.

3. (Previously Presented) The method according to claim 1, wherein the substrate is a frame made of metal or ceramic.

4. (Previously Presented) The method according to claim 1, wherein the first porcelain is provided by a porcelain whose viscosity at the casting temperature is at least 1.5 times as high as that of the second porcelain.

5. (Canceled)

6. (Previously Presented) The method according to claim 1, wherein the viscosity of the first porcelain at the casting temperature ranges from 2×10^6 (cP) to 5×10^7 (cP), while the viscosity of the second porcelain at the casting temperature ranges from 1×10^6 (cP) to 3×10^7 (cP).

7. (Currently Amended) A kit for forming, on a surface of a substrate of a dental prosthesis, an armored portion constituted by at least two coating layers, the kit comprising:

a first material constituted principally by ceramic for preparing a first porcelain that forms a back coating layer on the surface of the substrate; and

a second material constituted principally by ceramic for preparing a second porcelain that is constituted principally by ceramic whose composition is different from that of the ceramic of the first porcelain and that forms, by casting, a coating layer on a surface of

at least a part of the back coating layer,

wherein

viscosity of the second porcelain at a casting temperature is lower than that of the first ~~porcelain~~ porcelain,

the first material has, as a main component, a glass composition that is essentially constituted by oxides having respective percentage contents as follows:

SiO₂ _____ 40-75 (mass %);

Al₂O₃ _____ 10-20 (mass %);

K₂O _____ 5-15 (mass %);

Na₂O _____ 2-10 (mass %);

Li₂O _____ 0.1-2 (mass %);

ZrO₂ _____ 0-7 (mass %);

CaO _____ 0-5 (mass %);

MgO _____ 0-5 (mass %); and

SnO₂ _____ 0-30 (mass %);

and the second material has, as a main component, a glass composition that is essentially constituted by oxides having respective percentage contents as follows:

SiO₂ _____ 60-70 (mass %);

Al₂O₃ _____ 10-20 (mass %);

K₂O _____ 5-15 (mass %);

Na₂O _____ 3-15 (mass %);

Li₂O _____ 0.1-3 (mass %);

ZrO₂ _____ 0-3 (mass %);

CaO _____ 0.1-5 (mass %);

MgO _____ 0.1-5 (mass %);

B₂O₃ 0-3 (mass %);

CeO₂ 0-3 (mass %); and

Sb₂O₃ 0-7 (mass %).

8. (Original) The kit according to claim 7, wherein the first and second materials are prepared such that the viscosity of the first porcelain at the casting temperature is at least 1.5 times as high as that of the second porcelain.

9. (Canceled)

10. (Original) The kit according to claim 7, wherein the first and second materials are prepared such that the viscosity of the first porcelain at the casting temperature ranges from 2×10^6 (cP) to 5×10^7 (cP), while the viscosity of the second porcelain at the casting temperature ranges from 1×10^6 (cP) to 3×10^7 (cP).

11. (Withdrawn) A method of manufacturing a dental prosthesis, by fixing at least two ceramic layers onto a surface of a frame made of zirconia, wherein steps of forming the ceramic layers comprising:

a first step of fixedly forming, on the surface of the frame, a first ceramic layer of a first composition which contains, as main components, 66.0-72.0 (mass %) of SiO₂, 13.5-17.8 (mass %) of Al₂O₃, 0.05-0.31 (mass %) of Li₂O, 1.3-6.5 (mass %) of Na₂O, 8.7-12.5 (mass %) of K₂O, 0.1-0.5 (mass %) of CaO, 0.01-0.22 (mass %) of MgO, 0.1-0.6 (mass %) of Sb₂O₃, 0-3 (mass %) of CeO₂, 0-3 (mass %) of B₂O₃ and 0-3 (mass %) of SrO; and

a second step of fixedly forming, on a surface of the first ceramic layer, a second ceramic layer of a second composition which contains, as main components, 63.0-69.0 (mass %) of SiO₂, 14.8-17.9 (mass %) of Al₂O₃, 0.02-0.28 (mass %) of Li₂O, 1.5-6.8 (mass %) of Na₂O, 8.0-14.0 (mass %) of K₂O, 0.2-1.5 (mass %) of CaO, 0.05-0.55 (mass %) of MgO, 0.2-2.2 (mass %) of Sb₂O₃, 0.1-3 (mass %) of CeO₂, 0.1-3 (mass %) of B₂O₃

and 0-3 (mass %) of SrO, such that the first ceramic layer is covered at its surface with the second ceramic layer.

12. (Withdrawn) The method according to claim 11, wherein viscosity of the first ceramic layer at a temperature of heat treatment for forming the second ceramic layer in the second step, is higher than that of the second ceramic layer.

13. (Withdrawn) The method according to claim 11, wherein the second step for forming the second ceramic layer is implemented by filling, with a fluidity material, a void whose inner wall surface is partially constituted by the surface of the first ceramic layer.

14. (Withdrawn) The method according to claim 13, wherein the second step is implemented by filling the void with the fluidity material whose fluidity is increased by heating the fluidity material.

15. (Withdrawn) The method according to claim 13, wherein the first step for forming the first ceramic layer is implemented by filling, with a fluidity material, a void whose inner wall surface is partially constituted by the surface of the frame.

16. (Withdrawn) The method according to claim 11, wherein each of the first and second ceramic layers has coefficient of thermal expansion ranging from 9.1×10^{-6} (/ °C) to 10.3×10^{-6} (/ °C) at a temperature ranging from 25 (°C) to 500 (°C).

17. (Withdrawn) A dental porcelain set used for manufacturing a dental prosthesis by fixedly forming at least two ceramic layers on a surface of a frame made of zirconia, the dental porcelain set being constituted by at least two kinds of porcelains for forming the ceramic layers, the dental porcelain set comprising:

a first porcelain forming a first composition which contains, as expressed in terms of oxide, main components in the form of 66.0-72.0 (mass %) of SiO₂, 13.5-17.8 (mass %) of Al₂O₃, 0.05-0.31 (mass %) of Li₂O, 1.3-6.5 (mass %) of Na₂O, 8.7-12.5 (mass %) of K₂O, 0.1-0.5 (mass %) of CaO, 0.01-0.22 (mass %) of MgO, 0.1-0.6 (mass %) of

Sb₂O₃, 0-3 (mass %) of CeO₂, 0-3 (mass %) of B₂O₃, and 0-3 (mass %) of SrO; and

a second porcelain forming a second composition which contains, as expressed in terms of oxide, main components in the form of 63.0-69.0 (mass %) of SiO₂, 14.8-17.9 (mass %) of Al₂O₃, 0.02-0.28 (mass %) of Li₂O, 1.5-6.8 (mass %) of Na₂O, 8.0-14.0 (mass %) of K₂O, 0.2-1.5 (mass %) of CaO, 0.05-0.55 (mass %) of MgO, 0.2-2.2 (mass %) of Sb₂O₃, 0.1-3 (mass %) of CeO₂, 0.1-3 (mass %) of B₂O₃, and 0-3 (mass %) of SrO.

18. (Withdrawn) The dental porcelain set according to claim 17, wherein each of the first and second porcelains has, after burning thereof, coefficient of thermal expansion ranging from 9.1×10^{-6} (/ °C) to 10.3×10^{-6} (/ °C) at a temperature ranging from 25 (°C) to 500 (°C).

19. (Withdrawn) The dental porcelain set according to claim 17, wherein each of the first and second porcelains is prepared by: mixing compounds which generate oxides at a glass melting temperature; melting the mixture by heating the mixture; crushing the mixture; subjecting the mixture to a heat treatment that is carried out at a predetermined temperature such that leucite crystal is precipitated; adding pigment and fluorescent material to the mixture; and crushing the mixture.

20. (Previously Presented) The method according to claim 1, wherein in the step of forming the back coating layer, the first porcelain is burned at a burning temperature of 900 to 1100 (°C).

21. (Previously Presented) The method according to claim 1, wherein in the step of forming the cast coating layer, the second porcelain is softened at a heating temperature of 800 to 1200 (°C).

22. (Previously Presented) The method according to claim 1, wherein in the step of forming the cast coating layer, the cast coating layer is formed to cover an entirety of the

surface of the back coating layer.

23. (Canceled)

24. (Previously Presented) The method according to claim 2, wherein in the sub-step forming the model layer, the model layer is formed to have a configuration corresponding to a configuration of the cast coating layer.

25. (New) The method according to claim 1, wherein a ratio of SiO_2 (mass %) to Al_2O_3 (mass %) of the second porcelain is lower than the ratio of SiO_2 (mass %) to Al_2O_3 (mass %) of the first porcelain.

26. (New) The method according to claim 1, wherein a ratio of SiO_2 (mass %) to Na_2O (mass %) of the second porcelain is lower than the ratio of SiO_2 (mass %) to Na_2O (mass %) of the first porcelain.

27. (New) The kit according to claim 7, wherein a ratio of SiO_2 (mass %) to Al_2O_3 (mass %) of the second porcelain is lower than the ratio of SiO_2 (mass %) to Al_2O_3 (mass %) of the first porcelain.

28. (New) The kit according to claim 7, wherein a ratio of SiO_2 (mass %) to Na_2O (mass %) of the second porcelain is lower than the ratio of SiO_2 (mass %) to Na_2O (mass %) of the first porcelain.